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THE
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THIRTY-EIGHTH ANNUAL REPORT
OF THE
BOARD OF DIRECTORS
OF THE
ZOOLOGICAL SOCIETY
OF PHILADELPHIA.

(INCORPORATED MARCH 21ST, 1859.)

READ AT THE ANNUAL MEETING OF THE MEMBERS AND LOAN-
HOLDERS OF THE SOCIETY.

APRIL 28th, 1910.

A PHILADELPHIA:
PRESS OF ALLEN, LANE & SCOTT,
1211-1213 Clover Street.
1910.

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THE ZOOLOGICAL SOCIETY OF PHILADELPHIA.

(FAIRMOUNT PARK.)

BOARD OF DIRECTORS:

ELECTED BY THE SOCIETY.

CHARLES B. PENROSE, M. D., <i>President.</i>	D. M. BARRINGER, WILLIAM D. WINSOR, NORTON DOWNS, M. D., W. B. CADWALADER, M. D., ROBERT G. LE CONTE, M. D., HENRY PRATT McKEAN, CLEMENT B. NEWBOLD, CHARLES S. W. PACKARD, <i>Treasurer.</i>
CHARLES M. LEA, SAMUEL G. DIXON, M. D., <i>Vice-President.</i>	GEORGE L. HARRISON, JR., ARTHUR ERWIN BROWN, <i>Secretary.</i>
CHRISTIAN C. FEBIGER, <i>Vice-President.</i>	
THOMAS BIDDLE, M. D., THOMAS DEWITT CUYLER, OWEN WISTER, CHARLES PLATT, JR.,	

ELECTED BY THE CITY COUNCILS.

HAROLD ROSENGARTEN, ALFRED GRATZ.

GENERAL MANAGER.

ARTHUR ERWIN BROWN.

SUPERINTENDENT OF THE GARDENS.

ROBERT D. CARSON.

PATHOLOGIST.

HERBERT FOX, M. D.

SOLICITOR.

W. W. MONTGOMERY.

REPORT

OF THE

BOARD OF DIRECTORS.

PHILADELPHIA, April 28th, 1910.

The Board of Directors of the Zoological Society of Philadelphia presents to the members and loanholders its thirty-eighth annual report, for the year ending February 28th, 1910.

GENERAL AFFAIRS AND FINANCES.

The number of members at the close of the year was:—

Annual members.....	197
Life members.....	1,281
Corresponding members.....	6
Honorary members.....	14
Perpetual members.....	248
Junior members.....	48
Total members.....	1,794

The following is a report in detail of the admissions and receipts for the year:—

Adults (paying at gates).....	117,882
Children (paying at gates).....	36,482
Members (including life and annual members, loanholders' annual, and complimentary annual tickets)	865
Loanholders' single tickets.....	9,210
Free admissions (charitable institutions, donors' tickets, &c.)*.....	4,767
Coupon tickets.....	180
Excursion tickets.....	4,601
	173,987

* In addition to these, 175,000 tickets were issued to the Board of Education, for the admission of pupils of the Public Schools.

*Monthly Record of Receipts from Admissions for 1909-1910
with corresponding account for 1908-1909.*

MONTH	1908-1909	1909-1910	COMPARISON
March.....	\$1,498 40	\$1,075 80	Decrease.... \$422 60
April.....	2,090 95	2,159 60	Increase.... 68 65
May.....	2,544 30	2,457 85	Decrease.... 86 45
June.....	2,411 30	2,098 10	" 313 20
July.....	2,511 15	3,164 55	Increase.... 653 40
August.....	4,318 85	4,619 20	" 300 35
September..	3,318 70	3,534 95	" 216 25
October....	2,681 15	2,579 30	Decrease.... 101 85
November..	1,369 40	1,556 15	Increase 186 75
December..	816 30	695 50	Decrease ... 120 80
January....	767 70	725 80	" 41 90
February...	1,178 35	568 80	" 609 55
	\$25,506 55	\$25,235 60	Decrease.... \$270 95

THE GARDENS.

The total number of animals exhibited in each class during the year was:—

Mammals.....	479
Birds.....	933
Reptiles.....	884
Amphibians.....	52
	2,348

Among the accessions, species new to the collection were less in number than is usually the case, but among them were some of much interest.

Stairs' Monkey (*Cercopithecus stairsi* Sclater).

Hab., East Africa.

A specimen of this rare monkey, from the lower Zambesi, was purchased on April 28th.

Moloney's Monkey (*Cercopithecus moloneyi* Sclater).

Hab., East Africa.

Another monkey of much rarity, known only from the region of Lake Nyassa, was secured on June 16th.

Alpine Marmot (*Arctomys marmotta* L.).

Hab., southern Europe.

Several of these animals, familiar to all travelers in Switzerland, were purchased in November.

Bless-bok (*Damaliscus albifrons* Burchell).

Hab., South Africa.

A pair of these fine antelopes were purchased April 24th.

Leche Antelope (*Cobus leche* Gray).

Hab., central East Africa.

A pair purchased September 1st.

Thomson's Gazelle (*Gazella thomsoni* Gunther).

Hab., central East Africa.

This species and the three succeeding ones were among a number of animals collected by the Smithsonian Institution expedition to East Africa, conducted by Mr. Roosevelt, and were destined for the National Zoological Park, at Washington, for the convenience of which they were kept for some weeks in our garden. The collection arrived on December 18th.

Waterbuck (*Cobus ellipsiprymnus* Ogilby).

Hab., East Africa.

One specimen. Smithsonian collection.

Coke's Antelope (*Bubalis cokei* Gunther).

Hab., East Africa.

One specimen. Smithsonian collection.

Northern Wart-hog (*Macrocephalus africanus* Gmelin).

Hab., Central Africa.

One specimen. Smithsonian collection.

Swainson's Long-tailed Jay (*Calocitta formosa* Swainson).

Hab., Central America.

Two examples of this fine and showy species were received from Mexico on December 10th.

Crowned Blue Jay (*Cyanocitta coronata* Swainson).

Hab., Mexico.

A pair purchased August 26th.

Himalayan Chough (*Pyrhocorax graculus himalayanus* Gould).

Hab., Asia.

One specimen purchased April 29th.

Mexican Ptilogonys (*Ptilogonys cinereus* Swainson).

Hab., southern Mexico.

One specimen of this rare bird, an ally of the waxwings, purchased December 10th.

Orange-headed Ground Thrush (*Geocichla citrina* Latham).

Hab., India.

One specimen purchased December 12th.

Indian Coucal (*Centropus sinensis* Stephens).

Hab., southeastern Asia.

This species, belonging to the group of cuckoos, was added to the collection in April.

Nepalese Hornbill (*Aceros nipalensis* Hodgson).

Hab., India.

The fine series of hornbills in the collection was extended in May by the purchase of an example of this species.

Indian Roller (*Coracias indicus* L.).

Hab., southern Asia.

One specimen purchased April 28th.

Desert Buzzard (*Buteo desertorum* Daudin).

Hab., Africa, India.

A hawk received in June, 1908, in imperfect plumage has since been identified as belonging to this species.

White-throated Quail (*Eupsychortyx leucopogon* Lesson).

Hab., Colombia.

Two examples received by purchase.

Red-billed Pigeon (*Columba flavirostris* Wagler).

Hab., Texas and Mexico.

Seven examples were received from southern Texas on August 16th.

Pink-booted Goose (*Anser brachyrhynchus* Bail).

Hab., Spitzbergen, northwestern Europe.

A pair purchased in April.

Somali Ostrich (*Struthio molybdophanes* Reich).

Hab., East central Africa, Somaliland.

A male of this species purchased April 20th was a welcome

addition, as the other two recognized species of ostrich were already contained in the collection.

Occipital Cassowary (*Casuarius occipitalis* Salvadori).

Hab., Island of Jobi.

One specimen of this fine species purchased August 3d.

Mexican Mud Turtle (*Cinosternum integrum* Le Conte).

Hab., Sonora.

One example, received April 26th from Alamos, Sonora.

Ornate Terrapin (*Chrysemys ornata* Gray).

Hab., Mexico, Central America.

One example, from Alamos, received April 26th.

Cope's Comb Lizard (*Ctenosaura hemilopha* Cope).

Hab., Lower California, Sonora.

A number of comb lizards which came in April from Alamos, Sonora, correspond very closely to this species, which has previously been taken in Lower California.

Northern Many-keeled Lizard (*Gerrhonotus principis* B. & G.).

Hab., Oregon, Washington.

One specimen received June 17th from Klamath Falls, Oregon.

Western Scarlet Milk Snake (*Lampropeltis doliiatus gentilis* B. & G.).

Hab., Nebraska to Texas.

One specimen, from Ouachita County, Louisiana, presented by Mr. Arthur N. Cline.

Among other accessions of the year, the following may be noted: a fine specimen of the one-wattled cassowary, purchased March 30th; a pair of emus, received in exchange, and an Australian cassowary, purchased in April; a female oryx antelope, purchased as a mate to the male previously in the collection; a pair of huanacos, purchased April 29th; a fine bull of the Scotch, or Highland, breed of cattle, imported in May as a gift to the Society by Mr. J. Vaughan Merrick; a second specimen of panda, purchased May 19th; two jungle fowl cocks, presented by Dr. C. B. Davenport, of the Cold Spring Experimental Station, Long Island; a pair of wild boars; a male Livingstone's eland, purchased in November to complete a pair; a male of the long-haired tiger from Manchuria, purchased November 18th; two wild cats from

North Carolina, presented by Dr. Norton Downs; and a remarkably fine grey lagothrix monkey, from Brazil, presented in October by Mr. George W. C. Drexel.

It is interesting to observe that concurrently with the practical elimination of tuberculosis from the Monkey House—but one outbreak, strictly limited in extent, having occurred in the past two and a half years—increased fertility seems to have developed, no fewer than seven monkeys and one lemur having been bred during the year.

A full list of births is as follows:—

- 1 vervet monkey (*Cercopithecus lalandii*), ♂, May 13th.
- 2 rhesus monkeys (*Macacus rhesus*), ♂, April 9th; ♀, February 10th.
- 1 common macaque (*M. cynomolgus*), May 25th.
- 2 pig-tailed macaques (*M. nemestrinus*), ♀, January 15th; ♂, February 25th.
- 1 yellow baboon (*Papio cynocephalus*), ♂, June 3d.
- 1 black lemur (*Lemur macaco*), ♂, April 9th.
- 9 Texas skunks (*Mephitis mesomelas*), 8, April 3d; 1, July 8th.
- 4 common raccoons (*Procyon lotor*), 2, June 29th; 2, July 26th.
- 1 red deer (*Cervus elaphus*), ♂, June 16th.
- 1 Japanese deer (*C. sika*), ♂, June 30th.
- 1 hog deer (*C. porcinus*), ♀, September 9th.
- 2 Aoudads (*Ovis tragelaphus*), ♂, ♀, March 27th.
- 1 Angora goat, ♀, March 16th.
- 5 Indian antelope (*Antilope cervicapra*), 5 ♂.
- 1 American bison (*Bison bison*), ♂, June 29th.
- 4 prairie dogs (*Cynomys ludovicianus*), May.
- 1 red kangaroo (*Macropus rufus*), ♂, September 25th.
- 1 black-tailed wallaby (*M. ualabatus*), January 31st.
- 5 Reeves pheasants (*Phasianus reevesi*), May 20th.
- 1 silver pheasant (*Gennaeus nycthemerus*), July 16th.
- 7 summer ducks (*Aix sponsa*), May 5th.
- 2 Egyptian geese (*Chenalopex aegyptiaca*), November 12th.
- 4 mute swans (*Cygnus olor*), May 28th.
- 15 western diamond rattlesnakes (*Crotalus atrox*), August 28th.
- 6 copperheads (*Ancistrodon contortrix*), September 20th.

As the year has not shown any gain in the income of the Society, prudence required that no considerable outlay should be made for building purposes. Improvements, therefore, have been limited to minor alterations, at a cost of \$455. in the interior of the Zebra House, in order that the public may be admitted to the building, which was originally designed to be merely a shelter, the animals to be viewed in the outside yards. This change has relieved the disappointment often felt by visitors during the winter months, experience having shown that the animals must be kept indoors for considerable periods.

Many valuable additions, however, have been made to the collection, notwithstanding the lack of success which attended efforts to procure several species of large mammals which have not lately been represented in the Garden.

The pathological studies made at the laboratory have been conducted systematically, and the store of information contained in the minute and exact case records, and in the specimens themselves preserved in glass, or by other methods, is reaching dimensions which will speedily require especial provision for their care and storage in such manner that they will be easily accessible to pathologists or other investigators desiring to use them.

A tabulated list of the diseases found during the year's work is set forth in the report of the pathologist, under a revised system which is believed to add to their interest and value.

The thanks of the Board are extended to all from whom favors have been received.

By order of the Board,

ARTHUR ERWIN BROWN,
Secretary.

INCOME AND EXPENDITURES.

For fiscal year ending February 28th, 1910.

INCOME.

Membership dues	\$885 00	
Admission receipts	25,235 60	
Rents at Gardens	250 00	
Interest	2,101 80	
Sale of guides	357 45	
Goat and donkey rides	1,246 00	
Sundry receipts	840 64	
Received from the City of Philadelphia through the Commissioners of Fairmount Park	30,000 00	
		\$60,916 49

EXPENDITURES.

Salaries and wages	\$24,047 57	
Office expenses	557 16	
General expenses	27,309 83	
Alteration of zebra house	455 74	
Purchase of animals	8,230 55	
		\$60,600 85
Balance to credit of profit and loss	315 64	
		\$60,916 49

ROBERT G. LECONTE,

Treasurer.

March 21st, 1910, Audited and found correct.

STOCKTON BATES, C. P. A., for
STOCKTON BATES & SON.

REPORT OF THE LABORATORY FOR THE YEAR ENDING FEBRUARY 28, 1910.

The records of autopsies made in the Laboratory are given in table form below. Heretofore it has been the practice to enumerate the number of animals showing the various pathological conditions, under main headings of the respective anatomical tracts. The present report has followed the zoological classification and will show how many times the various pathological diagnoses were made in each order. The whole number in each class and order is also given. The method of classifying the pathological diagnoses adopted in the past has been used. All diagnoses are listed for purposes of record. All conditions noted are not among the causes of death, but are of etiological importance, or in the nature of sequelæ.

Total animals examined, 256.

Total *Mammalia* examined, 90.

Primates. Number examined, 21.

Diseases of the gastro-intestinal tract:

Gastritis, 4; enteritis, 6; colitis, 2; intussusception, 1.

Diseases of the circulatory system:

Pericarditis, 1.

Diseases of the liver:

Fatty change, 3; congestion, 2; hepatitis, 2; cloudy swelling, 1.

Diseases of the genito-urinary system:

Congestion of kidney, 2; nephritis, 2; infarct, 1; cloudy swelling, 1.

Diseases of the respiratory system:

Broncho-pneumonia, 1; bronchitis, 2; chronic pleural adhesions, 1.

Diseases of the lymphatic system:

Hyperplasia, 6; hyperemia, 2; perisplenitis, 2.

Miscellaneous:

Peritonitis, 3; osteomalacia, 3; osteitis, 1; *tuberculosis, ~~39~~,
lepto-meningitis, 1; injury, 2; undetermined, 2; parasites
in peritoneum, 3; nematodes in lung and intestinal serosa,
1; larvæ of diptera in omentum, 1.

* See note on tuberculin reaction.

Lemures. Number examined, 4.

Acute gastritis, 1; enteritis, 1; cloudy swelling of liver, 1; cloudy swelling of kidney, 1; edema of lungs, 1; coagulation necrosis of lymph nodes, 1; cholelithiasis, 1; acute infection, 1; shock, 1; decomposed, 1.

Carnivora. Number examined, 28.

Diseases of the gastro-intestinal tract:

Gastritis: 1 lion; 2 wildcats; 1 bear.

Enteritis: 1 ocelot; 1 puma; 1 lion; 5 bears; 4 wildcats; 1 lynx; 1 leopard; 1 cape hunting dog.

Colitis: 2 wildcats; 1 panda; 1 bear.

Intestinal toxemia: 1 wildcat; 1 fishing cat.

Abscesses: 1 panda.

Diseases of the circulatory system:

Myocarditis: 1 cape hunting dog; 1 puma; 1 lynx; 1 bear; 1 lion.

Cloudy swelling of myocardium: 1 bear.

Endocarditis: 1 lion.

Hydropericardium: 1 bear.

Hypertrophy of heart: 1 lion.

Atheroma of aorta: 1 wildcat.

Aneurysmal dilatation of aorta: 1 seal.

Dilatation of vena cava: 1 seal.

Dilatation of heart: 1 seal.

Diseases of the liver:

Cloudy swelling: 1 wildcat; 1 fishing cat.

Congestion: 1 ocelot; 1 wildcat; 1 cape hunting dog; 1 puma; 2 lions; 1 fishing cat.

Pigmentation: 1 seal.

Abscesses: 1 panda; 1 seal; 1 bear.

Diseases of the genito-urinary system:

Cloudy swelling of kidney: 1 wildcat; 1 bear.

Nephritis:

Acute: 1 ocelot; 1 cape hunting dog; 1 puma; 1 bear.

Toxic: 1 lynx; 1 bear.

Not specifically named: 1 fishing cat; 1 lion; 1 lynx; 1 wolf.

Congestion of kidney: 1 wildcat; 1 lion.

Sub-capsular hemorrhage: 1 lion.

Acute salpingitis and metritis: 1 bear.

Cystitis: 1 lynx.

Acute pyelitis: 1 bear.

Hyperemia of urethra: 1 coati.

Hemorrhage into adrenal: 1 bear.

Diseases of the respiratory system:

Congestion of lungs: 1 ocelot; 1 cape hunting dog; 1 leopard; 1 bear; 1 seal.

Edema of lungs: 1 ocelot; 1 cape hunting dog; 1 leopard; 1 bear.
 Bronchitis: 1 ocelot; 1 cape hunting dog.
 Pleuritis: 1 puma; 1 bear.
 Rhinitis: 1 puma.
 Naso-pharyngitis: 1 puma; 1 leopard.
 Abscesses and gangrene of lung: 1 puma.
 Pneumonia: 1 panda.
 Hydrothorax: 1 bear.
 Petechial hemorrhages: 1 bear.
 Infarcts in lung: 1 bear.

Diseases of the lymphatic system:

Splenitis: 2 bears.
 Congestion of spleen: 1 leopard; 1 lion; 1 bear.
 Necrosis: 1 wildcat.
 Hyperplasia: 1 puma; 2 lions; 1 wildcat; 1 seal.
 Abscesses: 1 panda; 1 leopard.
 Anemic infarct in spleen: 1 lion.

Miscellaneous:

Peritonitis: 1 bear.
 Pyemia: 1 panda; 1 bear.
 Septicemia: 1 lion.
 Infection with streptococcus pyogenes: 1 puma; 1 leopard.
 Infection with *B. suispestifer*: 1 lion.
 Infection with *B. pneumoecurium*: 1 bear.
 Ascites: 1 bear.
 Pancreatitis: 2 bears.
 Undetermined: 1 raccoon; 1 mink; 1 wolf; 1 bear.
 Injury: 1 raccoon.
 Parasites in stomach: 3 wildcats; 1 bear.
 Parasites in intestine: 2 wildcats; 2 bears; 1 lion; 1 leopard.
 Parasites in thigh muscles: 1 wildcat.

Rodentia. Number examined, 5.

Enteritis: 1 gopher; 1 mouse.
 Pericarditis: 1 porcupine.
 Congestion of liver: 1 porcupine.
 Chronic nephritis: 1 porcupine.
 Splenitis: 1 porcupine.
 Rachitis: 1 gopher.
 Injury: 1 agouti.
 Not posted: 1 rat.

Ungulata. Number examined, 22.

Diseases of the gastro-intestinal tract:

Gastro-enteritis: 1 mouflon; 1 deer.
 Colitis: 1 deer.
 Constipation: 1 tapir; 1 eland; 1 zebra.

Diseases of the circulatory system:

Chronic myocarditis: 1 mouflon.

Hypertrophy of heart: 1 deer.

Diseases of the liver:

Cholecystitis and cholangitis: 1 mouflon.

Congestion: 2 deer.

Cirrhosis: 1 deer; 1 zebra.

Diseases of the genito-urinary system:

Hemorrhage into adrenal: 1 aondad.

Stone in pelvis of kidney: 1 mouflon.

Congestion of kidney: 1 aondad; 1 deer.

Nephritis:

Acute: 1 eland; 1 deer; 1 zebra.

Chronic: 1 deer.

Not specifically named: 1 deer.

Diseases of the respiratory system:

Congestion of lungs: 1 mouflon.

Bronchitis: 2 deer.

Chronic pleural adhesions: 1 deer.

Naso-pharyngitis, laryngitis, and tracheitis: 1 deer

Diseases of the lymphatic system.

Splenitis: 1 mouflon; 2 deer.

Hyperplasia: 1 elk.

Hemosiderosis: 1 antelope.

Miscellaneous:

Tuberculosis: 6 deer.

Peritonitis: 1 deer.

Fat necrosis: 1 tapir.

Undetermined: 1 antelope; 4 deer.

Decomposed: 1 antelope.

Injury: 1 antelope; 1 deer.

Shock: 1 antelope.

Parasites in blood. Trypanosoma: 1 eland.

Parasites in gall bladder and intra hepatic bile ducts: 1 eland.

Edentata. Number examined, 2.

Hemorrhage into tongue and pharyngeal wall: 1 anteater.

Pericarditis: 1 armadillo.

Myocarditis: 1 armadillo.

Degeneration of myocardium: 1 anteater.

Acute nephritis: 1 armadillo.

Broncho-pneumonia: 1 armadillo.

Marsupialia. Number examined, 8.

Diseases of the gastro-intestinal tract:

Gastritis: 2 kangaroos; 2 opossums.

Enteritis: 3 opossums.

Diseases of the circulatory system:

Endocarditis: 1 opossum.

Pericarditis: 2 opossums.

Diseases of the liver:

Congestion: 1 opossum.

Cirrhosis: 1 opossum.

Focal necrosis: 1 opossum.

Diseases of the genito-urinary system:

Nephritis:

Acute: 1 kangaroo; 2 opossums.

Chronic: 2 opossums.

Urethritis: 1 opossum.

Purulent cystitis: 1 opossum.

Retention of urine: 1 opossum.

Diseases of the respiratory system:

Congestion of the lungs: 1 opossum.

Broncho-pneumonia: 1 opossum.

Bronchitis: 1 opossum.

Pleuritis: 1 opossum.

Diseases of the lymphatic system:

Splenitis: 1 opossum.

Hyperplasia: 1 kangaroo.

Lymphadenitis: 1 opossum.

Miscellaneous:

Acute infection: 1 kangaroo; 1 opossum.

Septicemia: 1 opossum.

Undetermined: 1 opossum.

Parasites in stomach: 4 opossums.

Parasites in intestine: 3 opossums.

Total *Aves* examined, 160.*Passeres*. Number examined, 63.

Diseases of the gastro-intestinal tract:

Gastritis, 1; enteritis, 24; impaction, 1; constipation, 1; food poisoning, 1; obstruction to bile and pancreatic ducts, 1.

Diseases of the circulatory system:

Pericarditis, 1; arteritis, 1; phlebitis, 1; rupture of left sub-clavian vein, 1.

Diseases of the liver:

Cloudy swelling, 5; fatty change, 2; pigmentation, 3; hepatitis, 3; congestion, 3; abscesses, 1; hemosiderosis, 2.

Diseases of the genito-urinary system:

Acute nephritis, 5; cloudy swelling of kidney, 4; necrosis of kidney, 1; congestion of kidney, 2.

Diseases of the respiratory system:

Congestion of lungs, 3; edema of lungs, 3; bronchitis, 3; broncho-pneumonia, 3; hemorrhage into lungs, 1.

Diseases of the lymphatic system:

Splenitis, 10; hyperplasia, 1; hemorrhage, 1.

Miscellaneous:

Acute infection, 10; tuberculosis, 1; mould infection, 3; peritonitis, 1; undetermined, 9; general congestion, 1.

Parasites in—

Proventricle, 1; air sacs, 3; intestine, 2; lungs, 1; blood, 1.

Picariæ. Number examined, 3.

Gastro-enteritis, 1; hepatitis, 2; acute nephritis, 1; cloudy swelling of kidney, 1; broncho-pneumonia, 2; pleuritis, 1; siderosis of lungs, 1; peritonitis, 1; pancreatitis, 1; mould infection, 1; decomposed, 1; filaria in proventricle, 1.

Psittaci. Number examined, 40.

Diseases of the gastro-intestinal tract:

Enteritis, 9; impaction, 2; hemorrhage in cloaca, 1.

Diseases of the liver:

Congestion, 1; fatty change, 2; focal necrosis, 1; cloudy swelling, 1.

Diseases of the kidney:

Acute nephritis, 2.

Diseases of the respiratory system:

Congestion of lungs, 1; edema of lungs, 1; bronchitis, 1; pleuritis, 1.

Diseases of the lymphatic system

Splenitis, 2.

Miscellaneous:

Acute infection, 1; tuberculosis, 4; peritonitis, 2; undetermined, 7; injury, 4; decomposed, 12; filaria in proventricle, 9; filaria in stomach, 2.

Striges. Number examined, 8.

Enteritis, 3; hepatitis, 1; nephritis, 1; splenitis, 1; mould infection 2; decomposed, 3.

Accipitres. Number examined, 12.

Diseases of the gastro-intestinal tract:

Enteritis, 5; intussusception, 1.

Diseases of the liver:

Hepatitis, 1; cloudy swelling, 2; cholecystitis, 1.

Diseases of the kidney:

Cloudy swelling, 3.

Diseases of the respiratory system:

Broncho-pneumonia, 1; pleuritis, 1.

Diseases of the lymphatic system:

Splenitis, 5.

Miscellaneous:

Peritonitis, 2; acute infection, 4; injury, 1; not posted, 1.

Parasites in—

Proventricle, 1; peritoneum, 1; air sacs, 1; blood, 2.

Columbæ. Number examined, 2.

Fatty change in liver, 1; nephritis, 1; splenitis, 1; osteomalacia, 1; myositis, 1; decomposed, 1.

Gallinæ. Number examined, 8.

Hepatitis, 1; fatty liver, 1; splenitis, 2; mould infection, 2; injury, 1; rupture of egg, 1; tuberculosis, 2; decomposed, 2.

Fulicariæ. Number examined, 1.

Injury, 1.

Alectorides. Number examined, 1.

Entero-colitis, fatty liver, acute nephritis, hyperplasia of spleen, tuberculosis.

Gaviæ. Number examined, 3.

Enteritis, 1; pigmentation of liver, 1; pyelitis, 1; splenitis, 1; necrosis of spleen, 1; myocarditis, 1; pancreatitis, 1; amyloid of liver, spleen, kidney, heart, and pancreas, 1.

Steganopodes. Number examined, 3.

Stalled, 1; choking, 1; enteritis, 2; congestion and edema of lung, 1; splenitis, 2; urate calculi in kidney, 1.

Herodiones. Number examined, 4.

Choking, 1; edema of lungs, liver, and kidney, 1; drowning, 1; decomposed-worms in peritoneum, 1.

Anseres. Number examined, 9.

Enteritis, 2; myocarditis, 1; hepatitis, 1; hemorrhagic infarct in liver, 1; nephritis, 1; splenitis, 1; mould infection, 1; injury, 2; decomposed, 4; infection, with cladothrex, 2.

Struthiones. Number examined, 3.

Glossitis, 1; enteritis, 1; constipation, 1; pericarditis, 1; hypertrophy of heart, 1; chronic aortitis, 1; fatty liver, 1; nephritis, 2; broken eggs, 1; salpingitis, 1; chronic periarthrits, 1.

Total *Reptilia* examined, 7.*Crocodilini*. Number examined, 6.

Gastritis, 2; enteritis, 3; stomatitis, 1; pericarditis, 1; hepatitis, 3; cholangitis, 1; necrosis in liver, 1; nephritis, 1; infarct in kidney, 1; hyperplasia of spleen, 1; splenitis, 1; pneumonia, 2; pleuritis, 1; parasites in stomach, 1; parasites in intestine, 1.

Squamata. Number examined, 1.

Caseous pneumonia, acute hepatitis, acute ascending pyelitis.

TUBERCULIN REACTION IN MONKEYS.

During the year 31 new monkeys have been tested by tuberculin injection according to our regular method. Twenty-two of these were passed. Of the remaining nine, 7 gave suspicious reactions and died or were killed. Two remain in the detention room for further testing. In May, 1909, a lot of seven monkeys was received, consisting of Red Monkey No. 21, Campbell's Monkey Nos. 22 and 23, White collared Mangabey No. 12, Yellow Baboon No. 51, Anubis Baboon No. 39 and Green Monkey No. 79. The last died of tuberculosis very shortly after arrival and not having been tested, is omitted from the total.

Of these monkeys, Yellow Baboon No. 51 and White Collared Mangabey No. 12 died after injection of tuberculin and before the temperature records were complete. They were tuberculous. Campbell's Monkeys Nos. 22 and 23 were condemned and found tuberculous. Anubis Baboon No. 39 and Red No. 21 were passed and sent to the Monkey House on May 30th. Anubis Baboon No. 39 was put into a cage with Anubis Baboon No. 38, Moloney's Monkey No. 1 and Malbrouck Monkey No. 2. On September 11, he was removed from the exhibition cage to the keeper's room because of purulent conjunctivitis. On September 14th, he was brought to the laboratory and the infected eye removed. The other eye became infected a week later and did not yield to treatment. The animal was killed September 24th, 1909. He had a caseous tubercle behind retina of second eye, caseous pneumonia, miliary tuberculosis of abdominal organs, and caseous nodules in posterior pharyngeal and mediastinal glands and in myocardium. The three monkeys in the same exhibition cage, viz., Anubis No. 38, Malbrouck No. 2 and Moloney's No. 1, were immediately removed to the laboratory, as were also the monkeys which had been in the keeper's room with him. Black Ape No. 8 and Mon-goose Lemurs Nos. 19, 23 and 24. Anubis Baboon No. 38 was retested, killed and found to have general caseous tuberculosis. Malbrouck's Monkey No. 2 was killed because of poor condition and extremely high irregular temperature.

It had general tuberculosis. Moloney's Monkey No. 1 was tested twice and pronounced healthy. He died in the Monkey House on February 14, 1910, of intussusception and acute peritonitis, but without evidence of tuberculosis. The monkeys returned from the keeper's room, three Mon-goose Lemurs and a Black Ape, were tested twice during the next three months. The Lemurs passed both tests and are now in the exhibition cages. The Black Ape had a questionable temperature chart after both injections and was finally killed, but showed no evidence of tuberculosis.

Since Anubis Baboon No. 39 was found to be tuberculous, 11 monkeys (aside from those described above) have died in the exhibition cages. No one has shown tuberculosis.

Before this outbreak there had been no deaths from tuberculosis in the Monkey House since October, 1907. The immediate removal to the laboratory of all animals which had come in contact with Anubis Baboon No. 39, and their re-testing, seems to have stamped out the disease. The possibility of allowing an infected animal to slip through occasionally has never been underestimated, but our experience in controlling the spread of the disease by removing all exposed animals and their rigid retesting has in reality strengthened our confidence in the tuberculin test. In reviewing the temperature of monkeys after tuberculin injection, great attention is paid to irregularities. Charts not following closely the general courses given in our published reports of this work are marked as unsatisfactory and the animals held for retesting, some three and four times. To our strictness in this respect we attribute our few failures.

PARASITES.

Spiroptera incerta in Psittaci.

These parasites have not been nearly so common this year. In 1907 there were 18, in 1908, 21 and 1909, 24. This year only 9 parrots showed these worms. They were Rosehill Parrakeet, 3; St. Thomas, 1; Pennant's Parrakeet, 2; Redsided Eclectus, 1; Grand Eclectus, 1; Brown Fronted Macaw, 1. Seven of these occurred in the first six months

of the year, from March to August. One was found in November, 1909, and one in January, 1910. In 1908 the greater numbers of deaths from these proventricular worms was also during the spring and summer months, and in last year's report it was suggested that the infection was subsiding because of the scarcity of cases in the second six months of the year. While there have been fewer cases, the seasonal appearance of the deaths is repeated. The disease is very common among the Rosehill Parrakeets, 20 out of 29 of these birds coming to autopsy in five years, showing it. A new lot of four of these birds arrived in February, 1909. Three of them died with the worms within three months. It may be that they introduced the infection, but where it came from originally we have of course no knowledge. Two other birds have had filarial worms in the proventricle. They are Green Glossy Starling and Sulphur Breasted Toucan. They were kept at the end of the Aviary most distant from the parrots. The worms found seem similar to the parrot worms but I am not sure they are the same.

General Parasites.

They have been the common varieties in the usual sites, with exception of a few cases of partial obstruction of the stomach of opossums. This was caused by a great number of nematodes attached firmly in the mucosa by the head. The cases of two wild cats dying in February, 1910, are interesting. They had many filarial worms coiled up between the great gluteal muscles on both sides near the sacral and caudal insertions.

Blood.

Attention has been given to the routine examination of fresh blood preparations, just after autopsy. These have not resulted in the finding of many parasites. Dr. A. C. Abbott is now receiving blood smears from every animal, provided it be not too far decomposed. He kindly offered to report to us his findings, and has done so when they dis-

closed the presence of anything unusual. The positive findings of Dr. Abbott and myself are as follows:—

Sparrow Hawk:

Trypanosoma.

Duck Hawk:

Halteridium.

Kestrel:

Proteosoma.

Yellow Headed Mynah:

Halteridium.

Hunting Crow:

Filaria embryos.

The determined parasites found during the year, besides those noted above, are:—

Black Handed Spider Monkey:

Filaria gracilis in peritoneum.

Zebra:

Ascaris equorum in stomach and intestines.

White Throated Cebus:

Filaria gracilis in peritoneum.

The case of a Livingston's Eland is worthy of a separate note. The animal was found to have had constipation, acute diffuse nephritis, trypanosoma in the blood and cestodes in the gall bladder and intrahepatic bile ducts.

The identification of the parasites is not complete. We cannot make a determination of the protozoa in the blood because we failed to take enough smears and these we had were not satisfactory. The cestodes are being examined by Dr. Allen J. Smith. Their distribution is interesting.

Autopsy Notes. "The liver is normal in size and general relations; surface and edges normal; firm consistency; red brown in color, with a glistening, smooth, moist section surface. The size and mucosa of the gall bladder are nor-

mal. It contains a pale clear brown fluid. The cystic, hepatic and common ducts are slightly distended. They contain a large number of thin cestodes which extend in all directions, and cross sections of the liver show them protruding from the cut bile ducts. The duct walls seem normal. The worms do not seem to impede the flow of bile seriously. Microscopic section shows the bile ducts widened and their mucosa compressed by the worms. There is no active inflammation but a slight tendency to necrosis where the ducts are well filled."

Special Cases.

No true neoplasms have been observed during the year. On December 11th, a paper was presented to the Pathological Society of Philadelphia, by Dr. C. Y. White and myself, entitled: "A Note on the Occurrence of Neoplasms in Wild Animals." This communication together with the discussion will be published in the Proceedings of the Pathological Society.

The following cases seem worthy of special mention:

1804. California Hair Seal.

There is a widened aorta without evidence of pathological change in the wall. This does not seem to be normal compared with similar organs in other specimens. All chambers of the heart are distended with chicken fat clot. The ascending arch up to the origin of the subclavian vessels is distended in a fusiform manner to 7.5 cm. at its widest point. The root and descending portions are 4.5 cm. Thoracic vena cava is normal, but just beneath the diaphragm, which is normal, the hepatic portion of the vena cava is widened into an ampulla at the expense of the liver. It measures 5 to 7 cm. The large diameter of this ampulla is at right angles to the general course of the vessel. The lower part of the vena cava measures 5 cm. All the tributary veins are widely distended. Venous walls are soft and thin, but microscopically normal.

1656. Mouflon.—Renal Calculi.

In the pelvis of both kidneys there are irregular dark brown concretions having the consistency of chalk. They do not obstruct the ureter or pelvis apparently, nor are the mucous membranes of these cavities affected.

1757. Gannet.—Renal Calculi.

Both kidneys are loaded with urates far beyond any normal condition. The upper lobe of the right kidney is somewhat larger than the corresponding part of right organ and nodules are found in the substance, by palpation. Upon section several firm yellow white urate concretions are found in distorted pelvis. They compress the tissue, but do not destroy it.

1733. Black Lemur.—Biliary Calculus.

There were found three small, hard, dark green stones in the gall bladder. There was no apparent change in the mucosa. No stones were found in any of the ducts.

Vegetative Endocarditis.

Two cases of this rather unusual condition were observed during the year, one in a common opossum and one in a lion. They both seem to be the effect of an acute general infection, but that in the opossum was of a short duration, perhaps two or three weeks, while the lion's heart has been affected for perhaps two months. In both do we find the aortic valve most affected, and in both is there an extension of the process across the short bridge of mural endocardium to the aortic mitral leaflet. In the opossum there is both stenosis and incompetency. In the lion stenosis is more marked and the valve is probably still competent, but largely because of the great size of the vegetations. In both animals there was a slight degree of cardiac hypertrophy particularly affecting the left side. The chambers did not seem dilated. In the lion there was also an enormous sub-capsular hemorrhage around the right kidney. This is probably due to rupture of an artery in the renal substance. There seems to have been no injury or tumor. The organ was saved for exhibition purposes; therefore dissection was not made. The atrium of these two infections is not clear.

REPORT OF DR. E. A. SCHUMANN ON SPECIMENS OF THE FEMALE GENITALIA.

The specimens of internal female genital organs examined, about 30, showed, with one exception, no evidence of disease.

1817. Black Bear.

The specimen consists of the entire internal genitalia. The organs are normal except the right uterine cornu, which is thickened, dense in consistency, covered with old adhesions, and having the abdominal ostium of the Fallopian tube closed. On section the walls of the cornua are thickened, especially the mucosa, which is deep purple in color, presents several hemorrhagic areas, and is of a soft degenerated character.

Microscopically, the cornu shows the presence of the decidual remnants of an infected abortion. There are found, decidual cells in various stages of disintegration, placental shadows, a diffuse infiltration of leucocytes and marked cloudy swelling of the entire mucosa. The ovary is unchanged.

SPECIMENS OF THE CENTRAL NERVOUS SYSTEM.

SPECIAL NOTES BY DR. J. H. W. RHEIN.

THE specimens of the nervous system which appeared to be the seat of any pathological change have, as heretofore, been submitted to Dr. J. H. W. Rhein. He has submitted notes of his examinations for this report. These notes seem worthy of reporting in full because of the close similarity of the neuropathological diagnosis. In all there is disease of the vascular and perivascular cells and involvement of the motor cells. They are in various stages of advancement but as yet we cannot correlate the histological changes

with the clinical courses. These histological changes have been met in four cases prior to this year, that is in two monkeys and two wild cats. Dr. Rhein and I are studying this collection of cases very carefully and hope to make a separate report on them very soon. I have subjoined the cases found during the past year, together with notes of the observed clinical course and the pathological diagnosis made at autopsy.

1735. *Black Bear*, ♂, about 7 months old.

CLINICAL NOTES.—About August 19th, this animal was observed to hold his head in an unnatural position as if his neck was sprained. This was not verified by the observations of the Superintendent and Head Keeper. On August 25th he did not eat well. After some days of irregularity in eating, &c., he was found lying on his back and unable to get on his feet. This condition continued, with some improvement toward the end, until his death, September 12th.

Pathological Diagnosis.—Acute enteritis, cloudy swelling of myocardium, chyle obstruction, ascites, acute pancreatitis, hydrothorax, hydropericardium.

DR. RHEIN'S NOTES.—The pia of the spinal cord presented nothing abnormal, except that there were more nuclei when compared to the pia of the spinal cord of other wild animals. The blood vessels were numerous and distended and showed a slight increase of the nuclei of the walls. The cells of the anterior horns were somewhat diseased. Some were rounded; the nuclei in some were diseased or have disappeared; in some there was atrophy of the pigment, and some showed vacuolisation. There were, however, many more normally staining cells present.

Neuropathologic Diagnosis.—Poliomyelitis.

1750. *Weeper Cebus*, ♂, small.

CLINICAL NOTES.—This animal, ever since he was received, acted in such a peculiar manner, seeming to have only partial control of his movements, that he was known as the "Crazy Monkey."

Pathological Diagnosis.—Chronic entero colitis, chronic adhesive pericarditis, early interstitial change in kidney. Edema of lungs.

DR. RHEIN'S NOTES.—The pia of the paracentral cortex was thickened and was the seat of a round cell infiltration of moderate degree, the cells being of the mono-nuclear type. The blood vessels of the cortex were congested and the nuclei of the walls were increased. The round cell infiltration of the pia had in some places extended into the cortical layers.

The pia surrounding the medulla oblongata was also the seat of a slight round cell infiltration. The pia of the spinal cord, however, did not show any cellular infiltration.

The cells of the anterior horns of the spinal cord were extensively diseased. The cells were swollen in places, some were surrounded by a glia proliferation and many of the cells showed marked vacuolisation.

Neuropathologic Diagnosis.—Meningitis and poliomyelitis.

1792. *Green Monkey*, ♀, small.

CLINICAL NOTES.—Has been a cripple for a long time and finally was condemned and killed at the laboratory.

Pathological Diagnosis.—General lymphatic hyperplasia, chronic osteitis (Tibial).

DR. RHEIN'S NOTES.—The pia in the paracentral region was the seat of a moderate round cell infiltration in some places. The blood vessels of the cortex were congested. The blood vessels of the pia were somewhat thickened.

The cellular infiltration in the pia consisted mainly of cells of the connective tissue type though some mono-nuclear cells were present. The pia of the medulla oblongata and spinal cord was also the seat of a round cell infiltration which was mainly around the posterior roots and was more marked in the lumbar region. The cells of the anterior horns in the cervical region were somewhat diseased. There was some vacuolisation and around the cells thus diseased was found an increase in the number of glia nuclei. Some of the cells were swollen, the nucleus displaced and around them the glia nuclei were increased. One cell appeared to contain some glia nuclei and was probably the seat of neurophagia.

In the lumbar region the peri-cellular accumulation of the glia nuclei with neuronophagia was present. A number of the cells were diseased, showing atrophy of the pigment, swelling of the cell body and disappearance of the nucleus. There were present, however, many normally staining cells. The blood vessels of the anterior horns in the cervical region were congested, showed peri-vascular round cell infiltration and an increase in the number of the nuclei in the blood vessel wall. The pial indentations are also the seat of a moderate round cell infiltration which is fairly constant and general. In the lumbar region the same condition is present but to a more marked degree.

Neuropathologic Diagnosis.—Meningitis and poliomyelitis.

1837. *Burchell's Zebra*, ♀, 9 years, 9 months old.

CLINICAL NOTES.—Ate well and appeared to be in good health until about seven hours previous to her death at which time she got down and after struggling for a short time lay quiet until she died.

Pathological Diagnosis.—Constipation, acute parenchymatous nephritis, cirrhosis of liver.

DR. RHEIN'S NOTES.—The pia from the paracentral and other regions of the cortex of the brain showed a marked round cell infiltration which in places involved the superficial layers of the cortex. The vessels of the cortex were much congested and there was a marked peri-vascular round cell infiltration of the cortex. This round cell infiltration invaded in places the white matter of the brain. In short there was an acute meningo-encephalitis.

The spinal cord showed nothing abnormal except some slight round cell infiltration of the pia.

Respectfully submitted,

HERBERT FOX, M. D.,
Pathologist.

LIST OF ADDITIONS TO THE MENAGERIE DURING THE YEAR
ENDING FEBRUARY 28TH, 1910.

1909.

- March 1. 1 red fox presented by Dr. James D. Price, Glen Mills, Pa.
 " 2. 1 diamond-backed terrapin presented by Norman MacGregor, Bryn Mawr, Pa.
 " 3. 1 red-tailed buzzard presented by E. Merkle, Philadelphia. 1 red-tailed buzzard presented by Charles McKinley, Philadelphia.
 " 7. 1 common crow presented by George L. Renz, Philadelphia.
 " 8. 1 raccoon presented by Neil Gallagher, Bridesburg, Philadelphia.
 " 11. 6 striated terrapins and 4 red-eared terrapins purchased.
 " 13. 1 common crow presented by David Sullivan, Philadelphia.
 " 21. 1 alligator presented by Master Jack McHugh, Philadelphia.
 " 23. 1 common garter snake presented by Dr. Henry Tucker, Philadelphia.
 " 24. 1 red salamander presented by A. C. Reed, Elmer, N. J.
 " 25. 1 bulfinch and 1 black-throated troupial purchased. 1 yellow-naped amazon presented by J. B. Borden, Philadelphia.
 " 27. 2 Aoudas (♂ and ♀) born in the Gardens. 1 alligator presented by J. Fletcher Street, Beverly, N. J.
 " 28. 2 diamond rattlesnakes purchased.
 " 29. 1 alligator presented by Dr. Kunkel, Philadelphia.
 " 30. 1 one-wattled cassowary, 1 great-spotted woodpecker and 1 Javan hill mynah purchased.
- April 1. 2 golden pheasants purchased.
 " 2. 5 black vultures purchased.
 " 8. 4 brant geese, 4 bernicle geese and 2 bean geese purchased. 1 common bittern presented by Cornelius Byrne, Philadelphia. 11 common garter snakes presented by Charles Ritter, Philadelphia.
 " 9. 1 black lemur born in the Gardens.
 " 11. 1 rhesus macaque born in the Gardens. 1 diamond-backed terrapin presented by Dr. Herman Burgin, Philadelphia.
 " 12. 1 common opossum presented by Robert J. Newton, Philadelphia.
 " 13. 1 painted terrapin, 2 margined painted terrapins, 3 red-eared terrapins and 6 striated terrapins presented by Dr. E. T. Reichert, Philadelphia.
 " 15. 1 alligator presented by Elias Abrams, Philadelphia.
 " 16. 1 wild canary, 2 orange-cheeked finches, 2 yellow-rumped seed-eaters, 3 cinereus waxbills, 2 yellow-bellied liothrix and 2 common iguanos purchased.
 " 17. 2 common garter snakes presented by Charles E. Ritter, Philadelphia. 2 pink-footed geese purchased.
 " 18. 1 alligator presented by Charles H. Aspden, Camden, N. J.
 " 19. 2 turkey vultures purchased. 1 Levaillant's amazon presented by Moses Bouyer, Philadelphia. 1 pine snake presented by George Ebenvein, Philadelphia.
 " 20. 2 lesser white-nosed monkeys, 2 black lemurs, 1 mongoose lemur, 1 Somali ostrich and 2 rheas purchased.

- April 22. 1 ground rattlesnake, 3 harlequin snakes, 5 black snakes, 3 common garter snakes, 2 Sacken's garter snakes, 3 keeled green snakes, 4 hog-nosed snakes, 2 indigo snakes, 6 pine snakes, 1 long-nosed sand snake, 1 slender snake, 3 brown water snakes, 4 banded water snakes and 2 Cyclop's water snakes purchased.
- " 23. 1 canary bird presented by Charles Campbell, Philadelphia.
- " 24. 2 bless-boks (♂ and ♀) and 1 oryz (♀) purchased. 4 prairie dogs presented by Dr. S. A. S. Metheny, Philadelphia.
- " 26. 3 black bear cubs presented by Joseph Berrier, Harrisburg, Pa. 16 Cope's comb lizards, 1 regal horned lizard, 1 ornate terrapin and 1 Mexican mud turtle, purchased.
- " 27. 1 great northern diver presented by J. Hazeltine Carstairs, Philadelphia. 1 keeled green snake presented by Dr. A. R. Renninger, Philadelphia.
- " 28. 2 Gila monsters presented by Walter S. Wheeler, Philadelphia. 1 Stairs' monkey, 1 golden cat, 2 mongoose lemurs, 1 Colombian jay, 2 hunting crows, 1 great barbet, 2 Himalayan choughs, 2 silver-eared liothrix, 2 white-crested jay thrushes, 2 white-throated jay thrushes, 1 Indian coucal, 1 Indian roller and 2 yellow-headed mynahs purchased.
- " 29. 2 huanacas (♂ and ♀) and 1 Australian cassowary purchased. 2 emus exchanged.
- " 30. 8 Texas skunks born in the Gardens.
- May 1. 2 hog-nosed snakes presented by Arthur W. Cline, Philadelphia.
- " 3. 1 anubis baboon, 1 yellow baboon, 2 Campbell's monkeys, 1 green monkey, 1 red monkey and 1 white-colored mangabey purchased. 2 raccoons presented by H. M. Adams, Oak Lane, Philadelphia.
- " 4. 1 alligator presented by the John Agnew School, Philadelphia.
- " 5. 7 summer ducks born in the Gardens.
- " 7. 2 leopards (♂ and ♀), 2 beautiful grass finches, 2 long-tailed grass finches, 4 spotted-sided finches, 2 red-headed finches and 2 red-tailed finches purchased.
- " 8. 4 prairie dogs born in the Gardens. 6 black snakes, 1 chicken snake, 3 garter snakes, 4 hog-nosed snakes, 1 indigo snake, 5 king snakes, 5 whip snakes, 2 ground rattlesnakes, 5 harlequin snakes, 6 six-lined lizards and 6 wave-lined lizards purchased.
- " 9. 1 milk snake presented by Jacob F. Hazey, Philadelphia. 1 American green lizard presented by J. H. Grubb, Jr., Philadelphia. 2 diamond-backed terrapins presented by Joseph F. Heilman, Philadelphia.
- " 10. 1 raccoon presented by Dr. A. R. Moulton, Philadelphia.
- " 12. 3 Western fox squirrels purchased.
- " 13. 1 vervet monkey born in the Gardens. 2 ground rattlesnakes, 5 water moccasins, 1 brown water snake, 2 banded water snakes and 5 Sacken's garter snakes purchased.
- " 14. 1 Nylghaie (♂), 6 yellow-bellied black snakes, 2 elegant bull snakes, 2 Fairie's garter snakes, 4 hog-nosed snakes, 5 Say's pine snakes, 2 Western sand snakes and 4 Holbrook's water snakes purchased.

- May 15. 1 Western scarlet milk snake presented by Arthur W. Cline, Philadelphia.
- " 17. 1 common deer purchased. 1 sparrow hawk presented by Francis R. Bond, Penllyn, Pa.
- " 19. 1 Highland bull presented by J. Vauhan Merrick, Philadelphia. 1 fishing cat, 1 panda, 1 Tamandua anteater, 5 Himalayan choughs, 2 gannets, 2 yellow-bellied cardinals, 2 chestnut-headed buntings, 2 yellow-rumped finches, 2 banded grass finches, 1 diamond rattlesnake, 2 ground rattlesnakes, 4 black snakes, 2 chicken snakes, 1 common garter snake, 3 hog-nosed snakes, 1 king snake, 2 pine snakes, 1 long-nosed sand snake, 1 scarlet snake, 1 whip snake and 29 Rocky Mountain garter snakes purchased.
- " 20. 4 mute swans and 5 Reeve's pheasants born in the Gardens.
- " 21. 4 Western diamond rattlesnakes, 2 yellow-bellied black snakes, 3 Faries' garter snakes, 1 Say's king snake, 5 whip snakes and 8 Holbrook's water snakes purchased.
- " 23. 1 Dekay's snake, 3 milk snakes, 3 common garter snakes and 3 common water snakes presented by Daniel Charlton and Frederick Hoge, Philadelphia. 1 common garter snake presented by Gertrude Miller, Philadelphia.
- " 24. 1 black bear cub presented by Joseph Berrier, Harrisburg, Pa. 1 canary presented by Percy Vaughn, Philadelphia.
- " 25. 1 common macaque born in the Gardens.
- " 26. 1 Dekay's snake and 3 common garter snakes presented by Daniel Charlton, Philadelphia.
- " 27. 1 albino robin presented by Charles W. Cox, Philadelphia.
- " 28. 1 common iguana presented by H. M. Singleton, Chief Engineer Steamship "American."
- " 31. 3 alligators purchased.
- June 1. 1 capybara purchased. 2 alligators presented by H. M. Bertolet, Gentry, W. Va. 1 alligator presented by J. J. Jones, Mahanoy Falls, Pa. 1 alligator presented by Moses Clay, Philadelphia. 12 bullfrogs presented by V. H. Zoll, Philadelphia.
- " 3. 1 yellow baboon born in the Gardens, 6 yellow-bellied black snakes, 3 elegant garter snakes, 4 California pine snakes, 2 many-keeled lizards and 3 occidental wave-lined lizards purchased.
- " 4. 1 banded rattlesnake presented by C. A. Potterfield, Charleston, W. Va.
- " 5. 5 ground rattlesnakes, 2 harlequin snakes, 6 chicken snakes, 1 corn snake, 1 common garter snake, 6 hog-nosed snakes, 1 indigo snake, 18 king snakes, 2 brown water snakes and 3 gopher tortoises purchased. 1 white-fronted amazon purchased.
- " 6. 3 common garter snakes, 4 common water snakes and 3 milk snakes presented by Samuel Charlton, Philadelphia.
- " 7. 1 alligator presented by Miss Helen Reeve, Philadelphia.
- " 8. 5 common garter snakes, 11 common water snakes, 4 striped water snakes, 4 box tortoises, 3 musk tortoises and 2

- striated terrapins presented by D. H. March, Gilbertsville, Pa.
- June 9. 2 western diamond rattlesnakes, 2 Marcy's garter snakes, 2 Say's king snakes, 2 Say's pine snakes, 1 western sand snake, 1 Holbrook's water snake and 1 whip snake purchased.
- " 10. 1 Canada porcupine purchased.
- " 11. 1 diamond rattlesnake, 1 harlequin snake, 1 hog-nosed snake, 1 rainbow snake and 1 ground rattlesnake purchased. 1 wild cat presented by P. M. Rea, Charleston, S. C.
- " 12. 3 duck hawks presented by Joseph Berrier, Harrisburg, Pa.
- " 16. 1 Moloney's monkey and 1 Malbrouck monkey purchased. 1 red deer born in the Gardens. 1 Canada porcupine presented by Dr. Henry Tucker, Philadelphia. 1 woodchuck presented by D. H. March, Gilbertsville, Pa. 1 mountain black snake, 3 common garter snakes, 3 keeled green snakes, 6 common water snakes and 7 copperhead snakes purchased.
- " 17. 5 Pacific rattlesnakes, 7 red-sided garter snakes, 6 yellow-bellied black snakes, 2 California pine snakes and 1 northern many-keeled lizard purchased.
- " 18. 1 gray squirrel presented by Roland C. Rogers, Philadelphia. 1 painted terrapin presented by William A. Asam, Philadelphia.
- " 19. 2 screech owls presented by Chester J. Pearce, Philadelphia.
- " 21. 2 California hair seals purchased.
- " 22. 1 white-throated monkey purchased.
- " 23. 3 raccoons born in the Gardens. 6 chicken snakes, 1 corn snake, 1 keeled green snake, 2 hog-nosed snakes, 2 long-nosed sand snakes, 1 red-bellied snake, 10 banded water snakes, 3 brown water snakes and 1 whip snake purchased.
- " 25. 1 sparrow hawk presented by Miss Katharine Lea, Devon, Pa. 1 screech owl presented by Arthur Peterson, Overbrook, Pa. 2 box tortoises presented by Master Edward Barnhart, Philadelphia.
- " 26. 1 Indian antelope born in the Gardens. 1 red-eared terrapin presented by John O'Donnell, Philadelphia.
- " 29. 1 American bison and 1 raccoon born in the Gardens. 7 great blue herons purchased. 1 barn owl presented by Daniel Boyd, Philadelphia. 2 alligators presented by John J. Rutherford, Philadelphia.
- " 30. 1 Japanese deer born in the Gardens. 1 rhesus macaque presented by F. Edgar Pennington, Media, Pa.
- July 1. 1 Canada porcupine purchased.
- " 2. 12 musk turtles presented by Herman Ritter, Philadelphia.
- " 3. 1 nonpareil presented by P. F. Harpel, Philadelphia. 2 box tortoises presented by Miss Helen Barnhart, Philadelphia.
- " 6. 1 white-fronted amazon presented by Mrs. Anna M. Treftz, Philadelphia.
- " 7. 1 Indian antelope born in the Gardens. 1 canary presented by Percy Vaughn, Philadelphia.
- " 8. 1 Texas skunk born in the Gardens. 2 banded rattlesnakes purchased.

- July 9. 4 Cooper's hawks presented by Thomas H. Jackson, West Chester, Pa.
- " 10. 1 box tortoise presented by James A. Griffis, Philadelphia.
- " 14. 1 Indian antelope (♂) born in the Gardens. 2 alligators presented by Mrs. Charles S. Walton, St. Davids, Pa.
- " 16. 1 silver pheasant born in the Gardens.
- " 17. 1 screech owl presented by Herbert L. Shontz, Oak Lane, Philadelphia. 2 young screech owls presented by A. Sergeson, Bryn Mawr, Pa.
- " 20. 2 raccoons born in the Gardens. 4 banded rattlesnakes purchased.
- " 21. 5 wave-lined lizards presented by Robert Young, Philadelphia. 1 red salamander presented.
- " 22. 1 yellow-throated parakeet presented by Mrs. Mahlon Hutchinson, Devon, Pa.
- " 28. 1 three-banded night monkey, 6 crested ground parakeets, 12 undulated grass parakeets, 1 blood-breasted pigeon, 2 yellow-billed whistling thrushes, 2 green waxbills, 2 rain quail and 3 snake-eating cobras purchased.
- " 29. 1 common garter snake presented by Master William A. Tucker, Philadelphia.
- August 1. 1 sparrow hawk presented by Reuben Macartney, Philadelphia.
- " 3. 1 occipital cassowary purchased. 1 llama (♂) and 1 robust kangaroo (♀) exchanged.
- " 5. 1 barn owl, presented by Alfred Pearce, Philadelphia.
- " 6. 1 pine snake, presented by Messrs. Warrington & Co., Philadelphia.
- " 7. 4 European swans and 3 Western diamond rattlesnakes purchased. 1 unadorned amazon presented by Mrs. M. Cotter, Philadelphia.
- " 11. 2 American crows presented by Richard Greenwood, West Manayunk, Philadelphia. 1 milk snake and 1 smooth green snake presented by Dr. Henry Tucker, Philadelphia.
- " 13. 2 Amhearth pheasants and 7 painted terrapin, purchased.
- " 16. 1 Virginia deer fawn presented by Joseph Berrier, Harrisburg, Pa. 7 red-billed pigeons purchased. 1 green finch, 1 chaffinch and 1 red-beaked weaver presented by E. H. Feinhold, Philadelphia.
- " 17. 1 least bittern presented by Miss Alice Hopkins, Bridesburg, Philadelphia.
- " 18. 1 diamond rattlesnake, 2 black snakes, 1 hog-nosed snake, 3 indigo snakes, 1 long-nosed sand snake, 3 pine snakes, 2 scarlet snakes and 2 whip snakes purchased. 2 common garter snakes presented by Miss Elizabeth Russell Tucker, Philadelphia.
- " 21. 1 orange-winged amazon presented by F. H. Goldey, Germantown, Philadelphia.
- " 22. 1 young night heron presented by Rev. Edward Thrall, Gloucester City, N. J.
- " 24. 2 jungle fowl (♂♂) presented by Dr. Charles B. Davenport, Cold Spring Harbor, Long Island, N. Y.
- " 26. 1 alligator presented by J. C. Edwards, Chester, Pa. 5 European magpies, 1 white-browed amazon, 3 paradise weaver

birds, 1 red-shouldered whydah bird, 2 bishop weavers, 2 Swainson's long-tailed jays and 1 Egyptian monitor purchased.

- August 28. 15 western diamond rattlesnakes born in the Gardens.
- Sept. 1. 2 North African ostriches (♂ and ♀), 2 leche antelopes (♂ and ♀), 1 Salvin's amazon, 1 Guatemalan amazon, 2 silver-blue tanagers and 4 rosy-faced love-birds purchased.
- " 4. 1 Douglass' horned lizard presented by Fred. Welp, Philadelphia.
- " 5. 1 common horned lizard presented by John W. Minnick, Frankford, Pa.
- " 6. 9 banded rattlesnakes presented by C. A. Chatham, St. Marys, Pa.
- " 7. 1 box tortoise presented by Master Frank Thacklinburg, Philadelphia.
- " 8. 3 American green lizards presented by Mrs. J. B. McCullough, Philadelphia.
- " 9. 1 hog deer born in the Gardens. 2 ravens, 1 lesser black-backed gull and 3 mew gulls purchased. 1 albino gray squirrel presented by Samuel B. Rambo, Harrisburg, Pa. 1 wild cat (♂) presented by William Franklin Mathues, Media, Pa.
- " 11. 1 mink captured in the Gardens.
- " 14. 1 opossum presented by William J. Drew, Philadelphia.
- " 17. 1 common macaque purchased.
- " 19. 1 red salamander presented.
- " 20. 6 copperhead snakes born in the Gardens.
- " 22. 1 alligator presented by J. Levin, Philadelphia.
- " 24. 1 weeper cebus presented by J. J. Hunt, Lewistown, Pa.
- " 25. 1 deadly snake, 1 dusky rat snake, 2 keeled tree snakes and 1 thick-necked tree boa purchased. 1 weeper cebus presented by W. E. Nuss, Olney, Philadelphia. 1 painted terrapin presented by Master George Calvin Harbison, Philadelphia.
- " 28. 1 alligator presented by George Egolf, Philadelphia.
- " 30. 1 Barbary ape, 1 three-banded night monkey, 1 chicken snake, 1 American glass snake, 1 indigo snake, 1 king snake, 2 keeled green snakes and 1 whip snake purchased.
- Oct. 1. 4 Mexican guans purchased. 1 bull frog presented by Mrs. G. Roth, Philadelphia.
- " 7. 1 fish hawk presented by Edward Gilbert, Philadelphia.
- " 8. 1 alligator presented by George Lassner, Philadelphia.
- " 10. 1 alligator presented by Edmund Barr, Philadelphia.
- " 12. 1 ring-necked snake presented by John A. Herboth, Philadelphia.
- " 14. 2 woodchucks (♂ and ♀) presented by R. Dale Benson, Jr., Philadelphia.
- " 16. 1 American coot presented by Stanley K. Smith, Philadelphia.
- " 18. 2 alligators presented by Arthur W. Cline, Philadelphia.
- " 19. 2 Guira cuckoos purchased.
- " 21. 2 grand eclectus (♂ and ♀) purchased. 4 box tortoises presented by R. G. Parry, Philadelphia.
- " 24. 1 double-crested cormorant presented by Ralph R. Hughes, schoolship "Adams."
- " 25. 2 box tortoises presented by Miss Mary Jaeger, Philadelphia, 1

- alligator presented by Master George W. Knadler, Jr., Elkins Park, Pa.
- Oct. 26. 1 nonpareil bunting presented by Miss Catherine S. Black, Philadelphia. 1 canary presented by Percy Vaughn, Philadelphia.
- " 27. 1 gray lagotherix presented by George W. Childs Drexel, Philadelphia. 6 hog-nosed snakes, 1 LeConte's snake, 7 Say's pine snakes and 2 western sand snakes purchased.
- " 30. 2 wild boar (♂ and ♀) purchased. 2 Barbary turtle doves presented by Winfield Hagerty, Philadelphia.
- Nov. 6. 1 prairie dog presented by Dr. S. A. S. Metheny, Philadelphia.
- " 7. 1 allegator presented by H. Hanley Parker, Philadelphia.
- " 10. 2 lesser white-nosed monkeys, 1 Javan cat, 2 Alpine marmots, 2 black-tailed wallabys and 7 burrowing owls purchased.
- " 11. 1 long-armed baboon purchased.
- " 12. 2 Egyptian geese born in the Gardens. 1 American robin presented by R. W. Deaver, Germantown, Philadelphia.
- " 16. 1 opossum presented by Van Campen Heilner, Philadelphia.
- " 17. 1 Livingstone's eland (♂) purchased.
- " 18. 1 Siberian tiger (♂) purchased.
- " 19. 1 Japanese deer (♀) presented by the New York Zoological Society. 1 opossum presented by Dr. L. J. Hammond, Philadelphia.
- " 24. 1 lioness (♀) purchased.
- " 25. 1 black snake, 1 chicken snake, 1 garter snake and 2 glass snakes purchased.
- " 26. 2 startlings presented by A. P. Hess, Pitman, N. J.
- " 27. 1 opossum presented by Mrs. Charles Hedenberg, Madison, Ga. 1 young hawk presented by Thomas S. Carlisle, Philadelphia. 2 rosehill parrakeets purchased.
- " 29. 4 screech owls presented by Ralph Linton, Moorestown, N. J.
- Dec. 1. 1 common macaque monkey presented by Dr. G. E. Hassinger, Middleburg, Pa.
- " 8. 1 red fox presented by William Eberhardt, Philadelphia.
- " 9. 1 bullfrog and 1 painted terrapin presented by William Beisel, Philadelphia.
- " 10. 1 Mexican ptilogonys, 1 orange-headed ground thrush and 2 crowned jays purchased.
- " 18. 2 Livingstone's elands, 2 Coke's hartebeests, 1 Thomson's gazelle, 1 water buck and 1 northern warthog deposited by the National Zoological Park, Washington, D. C.
- " 19. 1 painted terrapin presented by A. W. Cline, Philadelphia. 1 Indian antelope (♂) born in the Gardens.
- " 28. 5 black snakes, 5 garter snakes, 4 Sacken's garter snakes, 4 hog-nosed snakes, 2 rainbow snakes and 2 ring-necked snakes purchased.
- " 31. 1 wild cat purchased.
- 1910.
- Jan. 7. 2 mocking birds presented by Mrs. H. A. Thissell, Philadelphia.
- " 13. 2 wild cats presented by Dr. Norton Downs, Three Tuns, Pa.
- " 15. 1 black snake presented by Mrs. M. F. Steubel, Philadelphia. 1 pig-tailed macaque (♀) born in the Gardens.

- Jan. 18. 2 Mexican conures and 1 Mexican green jay purchased.
- " 22. 1 Indian antelope born in the Gardens.
- " 25. 1 crested porcupine purchased.
- " 27. 1 short-eared owl presented by Henry Brown, Philadelphia.
- " 31. 1 black-tailed wallaby born in the Gardens.
- Feb. 1. 1 lechee antelope born in the Gardens. 1 Canada porcupine presented by George D. Schock, Lancaster, Pa.
- " 5. 1 green monkey, 1 sooty mangabey, 1 golden-headed conure, 2 golden-crowned conures and 1 diamond rattlesnake purchased.
- " 7. 1 opossum presented by Charles A. Martin, Philadelphia. 1 opossum presented by Vic Richards, Eleventh Street Opera House, Philadelphia. 1 screech owl presented by Walter L. Hand, Bridgeton, N. J.
- " 10. 1 rhesus macaque born in the Gardens.
- " 14. 2 flying squirrels presented by M. C. Dager, Philadelphia.
- " 17. 1 snowy owl purchased.
- " 19. 3 common deer (♂ and ♀ ♀) purchased.
- " 21. 1 opossum presented by Joseph Medicus, Jr., Philadelphia.



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